



Questions & Answers on METHYL BROMIDE

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This fact sheet provides an overview of regulations governing the phase-out of methyl bromide, an ozone-depleting pesticide.

1. **Q:** *What is methyl bromide? What is it used for?*

A: Methyl bromide is a broad spectrum pesticide which is used as a fumigant in the control of pest insects, nematodes, weeds, pathogens, and rodents. In North America (42.2% of world use), it is used for soil fumigation (73%), commodity and quarantine treatment (8%), structural fumigation (10%), and chemical intermediates (9%).

2. **Q:** *Why has EPA taken action on a pesticide under the Clean Air Act?*

A: Methyl Bromide has been determined to be an ozone depleting substance (ODS), with recent scientific evidence estimating that bromine from this material is 50 times more effective at destroying ozone than chlorine from CFCs on a per atom basis. The ozone depletion potential (ODP) of this material has been assessed to be 0.6 by the 1994 Science Assessment of Ozone Depletion, a consensus documents prepared by 293 of the world's leading atmospheric scientists.

The Clean Air Act requires that all substances with an Ozone Depletion Potential (ODP) of 0.2 or greater be listed as class I substances, and be phased out in the United States within 7 years.

3. **Q:** *When will methyl bromide be banned?*

A: Under the Clean Air Act, the EPA has prohibited the production and import of methyl bromide after January 1, 2001. In addition, EPA has frozen U.S. production in 1994 at 1991 levels (December 10, 1993 - 58 [FR](#) 65018). EPA has allowed the longest possible time before a phase-out in order to facilitate the smoothest possible transition to alternatives.

4. **Q:** *Does the Clean Air Act restrict the use*

of methyl bromide before or after 2001?

A: No. The phaseout applies to chemical production and imports, not use. Pesticide use is governed by FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act).

5. **Q:** *Do products grown with or treated with methyl bromide have to be labeled as contributing to depletion of the ozone layer as is the case with other ozone depleting compounds?*

A: No. EPA has exempted agricultural products from labelling (58 [FR](#) 65043)

6. **Q:** *What about alternatives?*

A: This depends upon the specific crop and target pest. There is no one alternative for all of the many uses of methyl bromide, but there are several pest control tools which can manage pests currently controlled with methyl bromide. Viable alternative materials need not be identical to methyl bromide, but must effectively and economically manage those pests which are now being controlled by methyl bromide. Numerous chemical and non-chemical pesticides exist today which effectively control many of the pests on which methyl bromide is used. In addition, research on additional alternatives is underway and will likely result in a wide range of options, depending on the use of methyl bromide.

7. **Q:** *Are there specific alternatives for the uses of methyl bromide?*

A: The following alternatives for methyl bromide use areas are often pest specific, and can reduce economic pest levels when used as part of an overall integrated pest management program.
SOIL: Chemical alternatives include 1,3-dichloropropene, dazomet, chloropicrin, and metham sodium, as well as selective contact insecticides and herbicides. Non-chemical alternatives include crop rotation, organic amendments, steam, solar heating, biological control agents, cultural practices, and plant breeding.

- COMMODITY: Chemical alternatives include phosphine and carbonyl sulfide. Non-chemical alternatives include controlled atmospheres utilizing nitrogen and carbon dioxide, and heat and cold. STRUCTURAL: Chemical alternatives include sulfuryl fluoride and phosphine, as well as contact insecticides and rodenticides. Non-chemical alternatives include controlled atmospheres utilizing nitrogen and carbon dioxide, and heat and cold.
8. **Q:** *Does EPA understand how important a pesticide like methyl bromide is to American agriculture?*
A: The EPA recognizes the importance of the pesticidal activity of methyl bromide to the agricultural community, and will strive to minimize the effect of any actions required under the Clean Air Act. EPA is working closely with the U.S. agricultural community on research into materials which fit the pest management needs now being addressed by methyl bromide. In this regard, both EPA and USDA are working with scientists and farmers to insure that economically viable and environmentally sound alternatives are in place by the phase out date of 2001.
 9. **Q:** *I have heard that the ozone depletion potential (ODP) of this chemical is very uncertain, and will soon drop below 0.2. Is this true?*
A: While some uncertainties remain concerning the exact magnitude of methyl bromide's role in ozone depletion, the 1994 Science Assessment has calculated the ODP to be 0.6, and reports that "An uncertainty analysis suggests that the ODP is unlikely to be less than 0.3.", and states that "Methyl bromide continues to be viewed as a significant ozone-depleting compound." Additional research is ongoing to address outstanding uncertainties, and to define the precise ODP, which may turn out to be slightly higher or lower than 0.6.
 10. **Q:** *How much methyl bromide is produced by human activities, as compared to natural sources?*
A: The 1994 Science Assessment reports that methyl bromide is produced by:
 1) agriculture: 20-60 kilotons/year,
 2) biomass burning: 10-50 kt/yr,
 3) leaded gasoline burning: 0.5-22 kt/yr,
 and 4) oceans: 0-40 kt/yr (Butler, 1995).
 The amount of methyl bromide produced by agricultural sources is enough to have considerable impact on the stratospheric ozone layer, disrupting the natural balance of the atmosphere, and increasing the amount of hazardous radiation that reaches the earth.
 11. **Q:** *Is methyl bromide regulated in other countries besides the United States?*
A: Yes. The Netherlands phased out the use of methyl bromide for soil fumigation in 1992 because of ground water concerns. Denmark will ban agricultural use of methyl bromide in 1998, and Sweden is expected to follow a similar schedule. The European Union and Canada will cut agricultural use by 25% in 1998. A number of other countries are now contemplating regulatory action for methyl bromide use and production.
 12. **Q:** *What is the Montreal Protocol? What does it have to do with methyl bromide?*
A: The Montreal Protocol is an International Treaty (signed by over 150 countries) which governs the production and trade of ozone depleting substances (ODS). This Treaty is now in the process of phasing out CFCs and other ODS on a world-wide basis. In 1992, the Parties to the Montreal Protocol considered the science on methyl bromide, and set an ozone depletion potential (ODP) of 0.7, and froze production in 1995 at 1991 levels. In fall of 1995, the Montreal Protocol will consider the potential for additional controls for methyl bromide.
 13. **Q:** *What about the potential of trade disparities if methyl bromide is phased out in the United States and not in other areas of the world?*
A: The Montreal Protocol provides for an effective means of creating a level playing field by harmonizing regulations on an global basis.
 14. **Q:** *How can I get more information?*
A: Contact:
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